

WHAT IS CLAIMED IS:

1. An isolated antimicrobial non-scavenger Receptor A, non-toll like receptor polypeptide optionally having a molecular weight of about 22 kD to about 30 kD and having properties selected from the group consisting of
 - (a) being obtainable from a teleost, e.g., *Ictalurus punctatus*, mammalian monocytes or mammalian macrophages; binds to oligoguanosine; comprising 58 basic amino acids selected from the group consisting of K and R; comprising 50 hydrophobic amino acids selected from the group consisting of A, I, L, F, W and V; comprising 50 polar amino acids selected from the group consisting of N, C, Q, S, T and Y, containing 11 lysine-rich motifs;
 - (b) comprising an amino acid sequence selected from the group consisting of
 - (i)MSAQAEETAPEAAAPVQPSQPAAKKKGPASKAKPASAEEKKKKKGKPGPKYSQ LVINAI (amino acid residues 1-60 of SEQ ID NO:3);
 - (ii)MSAQAEETAPEAAAPVQPSQPAAKKKGPASKAKPASAEEKKKKKGKPGPKYS QLVINAIQTLGERNGSSLFKIYNEAKKVNWFDQQHGRVYLRYSIRALLQNDTLVQVK GLGANGSF (amino acid residues 1-118 of SEQ ID NO:3);
 - (iii)GPASKAKPASAEEKKKKKGKPGKY (amino acid residues 27-51 of SEQ ID NO:3); (iv) PRKTAKPTKKPAKKAACKKKRVSG (amino acid residues 136-159 of SEQ ID NO:3) and (v) PKKADKSPA VSAKKASKPKKAKQTAKKT (amino acid residues 173-203 of SEQ ID NO:3);
 - (c) being a polypeptide depicted in SEQ ID NO:3;
 - (d) being an allelic variant of SEQ ID NO:3;
 - (e) being a polypeptide that is encoded by a nucleic acid molecule that hybridizes under stringent conditions to the opposite strand of a nucleic acid molecule shown in SEQ ID NO:4;
 - (f) being a polypeptide depicted in SEQ ID NO:3 with conservative amino acid substitutions and
 - (g) being a fragment of (a)-(f), wherein said fragment comprises at least 24 contiguous amino acids and antimicrobial activity.
- 30 2. A library comprising one or more polypeptides of claim 1.

3. A kit comprising the polypeptide of claim 1 or library of claim 2 and optionally a detectable label.
3. A method of identifying an antimicrobial polypeptide comprising contacting candidate compounds with the polypeptide of claim 1 or library of claim 10 and selecting those compounds capable of inhibiting the bioactivity of said polypeptide.
4. A method for obtaining the polypeptide of claim 1 comprising
 - (a) optionally culturing cytotoxic cells obtainable from a teleost fish, mammalian monocytes or mammalian macrophages
 - (b) isolating membranes from cultured cells selected from the group consisting non specific cytotoxic cells obtainable from a teleost fish and
 - (c) isolating said polypeptide from said isolated membranes of (b) and
 - (d) optionally determining if said isolated polypeptide binds to oligoguanosine and/or if
 - 15 said isolated polypeptide has antimicrobial activity.
5. An isolated nucleic acid, said nucleic acid having a nucleotide sequence at least 95% identical to a sequence selected from the group consisting of:
 - (a) a nucleic acid encoding an antimicrobial polypeptide depicted in SEQ ID NO:3;
 - (b) a nucleic acid consisting of SEQ ID NO:4 which encodes an antimicrobial polypeptide depicted in SEQ ID NO:3
 - (c) a nucleic acid which is an allelic variant of SEQ ID NO:4;
 - (d) a nucleic acid which hybridizes under stringent conditions to any one of the nucleic acid specified in (a)-(c);
 - 25 (e) a nucleic acid that is a complement of the nucleic acid specified in (a) – (d) and
 - (f) a nucleic acid fragment of (a)-(e) containing at least 70 nucleotides.
6. A construct, vector or host cell comprising the nucleic acid of claim 5.
- 30 7. A pharmaceutical composition comprising the polypeptide of claim 1 and/or nucleic acid of claim 5 and a pharmaceutically acceptable carrier or excipient.

8. A pharmaceutical composition comprising the polypeptide of claim 1 and/or nucleic acid of claim 5 for use in treating a disorder resulting from a microbial infection and/or reducing antibiotic resistance.

5 9. The pharmaceutical composition of claims 7-8, wherein said polypeptide is present in an amount effective to inhibit microbial growth, e.g., bacterial, protozoa, fungal growth in a subject, e.g., mammal (human) subject or in an amount effective to reduce antibiotic resistance.

10 10. The pharmaceutical composition of claims 7-8, further comprising a second antimicrobial agent.

11. A microarray comprising one or more nucleic acids of claim 5.

15 12. A kit comprising one or more nucleic acids of claim 5 and optionally a detectable label or a microarray of claim 11.

13. A method for detecting the presence or absence of an antimicrobial polypeptide in a sample comprising

20 (a) determining the presence or absence of a nucleic acid hybridizing to the nucleic acid of claim 5 or microarray of claim 11 and

(b) assaying said sample for antimicrobial activity.

14. A method for obtaining the polypeptide of claim 1 comprising

25 (a) culturing one or more host cells comprising a nucleic acid encoding said polypeptide and

(b) isolating said polypeptide from said cultured cells of (a).

15. A method for preparing an antibody which binds the polypeptide of claim 1
30 comprising

(a) optionally conjugating said polypeptide to a carrier protein;
(b) immunizing a host animal with said polypeptide or polypeptide-carrier protein conjugate of step (c) with an adjuvant and
(c) obtaining antibody from said immunized host animal.

16. A method for obtaining a monoclonal antibody which binds the polypeptide of claim 1 comprising
- a) immunizing an animal with said polypeptide;
 - 5 b) isolating antibody producing cells from the animal;
 - c)fusing the antibody producing cells with immortalized cells in culture to form monoclonal antibody-producing hybridoma cells;
 - d) culturing the hybridoma cells; and
 - e) isolating from the culture monoclonal antibodies which bind to said polypeptide.
- 10 17. A monoclonal or polyclonal antibody which binds the polypeptide of claim 1 and optionally obtained according to the method of claims 15-16.
18. A library comprising one or more antibodies of claim 17.
- 15 19. A kit comprising (a) the antibody of claim 17 or the library of claim 18, and optionally (b) the antibody of claim 16 comprising a detectable label and/or a binding partner for said antibody, wherein said binding partner is conjugated to a detectable label.
- 20 20. A method for identifying an antimicrobial compound comprising contacting candidate compounds with the antibody of claim 17 or the library of claim 18 selecting those compounds capable of binding said antibody.
21. A method of obtaining an antimicrobial compound comprising
- 25 (a) isolating membranes from cultured cells selected from the group consisting non specific cytotoxic cells obtainable from a teleost fish, mammalian macrophages or monocytes; (b) combining said membranes with the antibody of claim 16 and (c) isolating a compound from said membranes that bound to said antibody.
- 30 22. Use of the polypeptide of claim 1 or nucleic acid of claim 5 for the manufacture of a medicament for the treatment of a disorder resulting from a microbial infection and/or reducing antibiotic resistance.